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TITLE : THERMOPLASTIC RESIN FOAM AND ITS MANUFACTURE

ABSTRACT : PROBLEM TO BE SOLVED: To efficiently manufacture the thermoplastic resin foam of a cell which has a fine surface appearance and an average microcell diameter and a uniform average cell density by causing a mixture of respectively specific amounts of thermoplastic resin and fluoroalkane ester of fatty carboxylic acid at a specific temperature to foam with an inert gas in a supercritical state as a foaming agent.

SOLUTION: A resin composition consisting of 100pts.wt. of thermoplastic resin and 0.1-10 pts.wt. of fluoroalkane ester of fatty carboxylic acid is melted at 100-400°C in an extruder. Further, 0.1-30 pts.wt. of inert gas in a supercritical state as a foaming agent are added for 100 pts.wt. of the thermoplastic resin composition to create a completely miscible state between the thermoplastic resin composition and the inert gas. Next, the temperature of the molten resin is reduced to 60-200°C in the extruder while the pressure is maintained at a level higher than the critical pressure of the inert gas as the foaming agent. Thus it is possible to obtain a processing rate 1.2-2 times as much, compared to the case in which the thermoplastic resin alone is used, in a die heated higher than the glass transition temperature of the resin.

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